

## PART 1- GENERAL

### 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

#### AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 834	(1995) Latex Sealants
ASTM C 920	(1998) Elastomeric Joint Sealants

### 1.2 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

#### 1.2.1 SD-03, Product Data

- a. Sealants
- b. Primers
- c. Bond breakers
- d. Backstops

Data for the sealants shall include shelf life, recommended cleaning solvents, and application instructions and precautions.

### 1.3 ENVIRONMENTAL CONDITIONS

The ambient temperature shall be within the limits of 40 and 100 degrees F when sealant is applied.

### 1.4 DELIVERY AND STORAGE

Deliver materials to the job site in unopened manufacturers' external shipping containers, with brand names, date of manufacture, color, and material designation clearly marked thereon. Elastomeric sealant containers shall be labeled to identify type, class, grade, and use. Carefully handle and store materials to prevent inclusion of foreign materials or subsection to sustained temperatures exceeding 100 F degrees or less than 0 degrees F.

## PART 2 - PRODUCTS

### 2.1 SEALANTS

Provide sealant that has been tested and found suitable for the substrates to which it will be applied.

- A. General Sealer Requirements: Provide colors as selected by the Architect from manufacturer's standard colors. Select materials for compatibility with joint surfaces and other indicated exposures, and except as otherwise indicated select modules of elasticity and hardness or grade recommended by manufacturer for each application indicated.

- B. Single-Component Polysulfide Sealant: Except as otherwise indicated, provide manufacturer's standard, non-modified, one-part, polysulfide-based, air-curing, elastomeric sealant; complying with either ASTM C 920 Type S Class 25, or FS TT-S-00230C Class A; self-leveling grade/type where used in joints of surfaces subject to traffic, otherwise nonsag grade/type.
- C. Single-Component Silicon Rubber Sealant: Except as otherwise indicated, provide manufacturer's standard, non-modified, one-part, silicone-rubber-based, air-curing, nonsag, elastomeric sealant; complying with either ASTM C 920 Type S Class 25 Grade NS, or FS TT-S-001543A Class A type Non-sag.
- D. Sanitary Interior Type: Where indicated and where applied in non-humidity or wet service, provide manufacturer's mold/mildew-resistant, acid type sealant for application to nonporous sealant bond surfaces.
- E. Bituminous and Fiber Joint Filler (Expansion Joint-EJ): Provide resilient and non-extruding type pre-molded bituminous-impregnated fiber-board units complying with ASTM D 1751; FS HH-F-341, Type I; or AASHTO M 213.
- F. Joint Primer/Sealer: Provide type of joint primer/sealer recommended by sealant manufacturer for joint surfaces to be primed or sealed.
- G. Sealant Backer Rod: Provide compressible rod stock of polyethylene foam, polyurethane foam, polyethylene jacketed polyurethane foam, butyl rubberfoam, neoprene foam or other flexible, permanent, durable non-absorptive material as recommended by sealant manufacturer for back-up of and compatibility with sealant.

## 2.2 PRIMERS

Provide a nonstaining, quick-drying type and consistency recommended by the sealant manufacturer for the particular application.

## 2.3 BOND BREAKERS

Provide the type and consistency recommended by the sealant manufacturer for the particular application.

## 2.4 BACKSTOPS

Provide glass fiber roving or neoprene, butyl, polyurethane, or polyethylene foams free from oil or other staining elements as recommended by sealant manufacturer. Backstop material shall be compatible with sealant. Do not use oakum and other types of absorptive materials as backstops.

## 2.5 CLEANING SOLVENTS

Provide type(s) recommended by the sealant manufacturer except for aluminum and bronze surfaces that will be in contact with sealant.

# PART 3 - EXECUTION

## 3.1 SURFACE PREPARATION

Surfaces shall be clean, dry to the touch, and free from dirt, frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would tend to destroy or impair adhesion. When resealing an existing joint, remove existing caulk or sealant prior to applying new sealant.

### 3.1.1 Steel Surfaces

Remove loose mill scale by sandblasting or, if sandblasting is impractical or would damage finish work, scraping and wire brushing. Remove protective coatings by sandblasting or using a residue-free solvent.

### 3.1.2 Aluminum or Bronze Surfaces

Remove temporary protective coatings from surfaces that will be in contact with sealant. When masking tape is used as a protective coating, remove tape and any residual adhesive just prior to sealant application. For removing protective coatings and final cleaning, use nonstaining solvents recommended by the manufacturer of the item(s) containing aluminum or bronze surfaces.

## 3.2 SEALANT PREPARATION

Do not add liquids, solvents, or powders to the sealant. Mix multicomponent elastomeric sealants in accordance with manufacturer's instructions.

## 3.3 APPLICATION

### 3.3.1 Joint Width-To-Depth Ratios

#### a. Acceptable Ratios:

JOINT WIDTH	JOINT DEPTH	
	Minimum	Maximum
For metal, glass, or other nonporous surfaces:		
1/4 inch (minimum) over 1/4 inch	1/4 inch 1/2 of width	1/4 inch Equal to width
For wood, concrete, masonry, stone:		
1/4 inch (minimum) Over 1/4 inch to 1/2 inch	1/4 inch 1/4 inch	1/4 inch Equal to width
Over 1/2 inch to 2 inches Over 2 inches	1/2 inch (As recommended by sealant manufacturer)	5/8 inch

b. Unacceptable Ratios: Where joints of acceptable width-to-depth ratios have not been provided, clean out joints to acceptable depths and grind or cut to acceptable widths without damage to the adjoining work. Grinding shall not be required on metal surfaces.

### 3.3.2 Backstops

Install backstops dry and free of tears or holes. Tightly pack the back or bottom of joint cavities with backstop material to provide a joint of the depth specified. Install backstops in the following locations:

- a. Where indicated.
- b. Where backstop is not indicated but joint cavities exceed the acceptable maximum depths specified in paragraph entitled, "Joint Width-to-Depth Ratios."

### 3.3.3 Primer

Immediately prior to application of the sealant, clean out loose particles from joints. Where recommended by sealant manufacturer, apply primer to joints in concrete masonry units, wood, and other porous surfaces in accordance with sealant manufacturer's instructions. Do not apply primer to exposed finish surfaces.

### 3.3.4 Bond Breaker

Provide bond breakers to the back or bottom of joint cavities, as recommended by the sealant manufacturer for each type of joint and sealant used, to prevent sealant from adhering to these surfaces. Carefully apply the bond breaker to avoid contamination of adjoining surfaces or breaking bond with surfaces other than those covered by the bond breaker.

### 3.3.5 Sealants

Provide a sealant compatible with the material(s) to which it is applied and also with other sealants used on this project. Do not use a sealant that has exceeded shelf life or has jelled and can not be discharged in a continuous flow from the gun. Apply the sealant in accordance with the manufacturer's instructions with a gun having a nozzle that fits the joint width. Force sealant into joints to fill the joints solidly without air pockets. Tool sealant after application to ensure adhesion. Sealant shall be uniformly smooth and free of wrinkles. Upon completion of sealant application, roughen partially filled or unfilled joints, apply sealant, and tool smooth as specified.

## 3.4 PROTECTION AND CLEANING

### 3.4.1 Protection

Protect areas adjacent to joints from sealant smears. Masking tape may be used for this purpose if removed 5 to 10 minutes after the joint is filled.

### 3.4.2 Final Cleaning

Upon completion of sealant application, remove remaining smears and stains and leave the work in a clean and neat condition.

- a. **Masonry and Other Porous Surfaces:** Immediately scrape off fresh sealant that has been smeared on masonry and rub clean with a solvent as recommended by the sealant manufacturer. Allow excess sealant to cure for 24 hour then remove by wire brushing or sanding.
- b. **Metal and Other Non-Porous Surfaces:** Remove excess sealant with a solvent-moistened cloth.

END OF SECTION